



MINUTES

DRAFT

TECHNICAL COMMITTEE 5.1

2022 Winter Meeting

January 31st, 2022

Note: These draft minutes have not been approved and not the official, approved record until approved by the Technical Committee.



Fans

ASHRAE Technical Committee 5.1

DRAFT TC/TG/MTG/TRG MINUTES COVER SHEET

TC/TG/MTG/TRG No. _____ TC 5.1 _____ March 17, 2022

TC/TG/MTG/TRG TITLE _____ Fans _____

DATE OF MEETING January 31st, 2021 LOCATION Hybrid (Las Vegas, NV and Virtual)

Attendees				
Name	Affiliation	Status	YEA	Notes; Subcommittee(s) of Interest
Wang, Zhiping	Morrison Products	Voting		TC Chair
Bade, John	California Investor-Owned Utilities	Voting		
Chinoda, Zvirimumwoyo	Revcor, Inc.	Voting		Handbook S/C Chair
Fullerton, Brent	Loren Cook	Voting		
Ganesh, Rad	Twin City Fan Co	Voting		MNQ
Johar, Chait	Aaon	Voting	Yes	MNQ
Mathson, Tim	AMCA International	Voting		Vice Chair
Osborn, Kim	Nortek Air Solutions	Voting		RP 1707 PMS Chair
Raychaudhuri, Asesh	Dept of Veterans Affairs	Voting		
Reynolds, Brian	Trane	Voting		Research S/C Chair
Sterne, Adam	ACME Engineering + Mfg	Voting		
VanderKooy, Mark	Greenheck	CM	Yes	TC Secretary
Brooks, Joe	AMCA International	CM		Standards S/C Chair
Eldridge, Jay	Daikin	CM		
Fetting, Nathan	Greenheck	CM	Yes	
Feuser, Michael	Clarage	CM		
Fizer, Jay	Big Ass Fans	CM		
Gebke, Kevin	DuctSox	CM		Interest in Standards
Kuntz, Ken	Greenheck	CM		
Lyda, Michael	Advanced Energy	CM		
Ross, Douglas	M.K. Plastics	CM		
Shoemaker, Nathan	Revcor, Inc.	CM		
Tinglof, Eric	Loren Cook	CM		
Valbracht, Bob	Loren Cook	CM		
Wagner, Greg	Morrison Products	CM		
Wray, Craig	Consulting Engineer	CM		
Diaz, Brandon	Johnson Controls	PCM	Yes	
Hamamcioglu, Sarp	AHRI	PCM	Yes	
Shaikh, Shams	Eglenlabs	PCM	Yes	
Volker, Olivia	Clarage	PCM	Yes	
Bissler, Bobby	Morrison Products	Guest	Yes	

Fiegen, Joe	Trane	Guest		
Rosner, Nick	Schneider Electric	Guest	Yes	TC 1.11 Vice Chair
Wen, Jin	Drexel University	Guest		Section 5 Research Liaison
Absent Voting Members				
Dubensky, Harold	JCI	Voting		Webmaster
Stauter, Rich	Carrier	Voting		Program S/C Chair

CM: Corresponding Member; PCM: Provisional Corresponding Member; MNQ: Member Non-Quorum.

DISTRIBUTION: <i>All Members of TC plus the following:</i>	
TAC Section Head: Kevin Marple	SH5@ashrae.net
All Committee Liaisons, such as Research, Standards, Handbook, Staff, etc.	See ASHRAE email alias list for needed addresses.
Mike Vaughn, Manager Of Research & Technical Services	MORTS@ashrae.net

ASHRAE TC 5.1 Fans

Minutes of the Hybrid Meeting (In person in Las Vegas, NV and Virtual)

Monday January 31st, 2022

1. Call to Order at 2:30 pm PST

This meeting was called to order at 2:32 pm PST.

2. Roll Call

TC 5.1 voting members:

Zhiping Wang – Chair
Tim Mathson – Vice Chair
Z. Patrick Chinoda – Handbook S/C Chair
Brian Reynolds – Research S/C Chair
Dr. Rad Ganesh - MNQ
John Bade
Brent Fullerton
Kim Osborn
Asesh Raychaudhuri
Adam Sterne

Non-Voting S/C Chairs:

Mark VanderKooy – Secretary
Joseph Brooks – Standards S/C Chair

10 (out of 13 total) voting members were present and a quorum was established. All attendees were asked to report their attendance using either the in-person or online sign-in sheet.

3. Adoption of Agenda

The draft agenda previously posted on the TC 5.1 basecamp (<https://3.basecamp.com/3106353/buckets/8415694/uploads/4464285504>) and website (<http://tc0501.ashraetcs.org/>) was adopted unanimously.

4. Approval of the Previous Meeting Minutes

The last meeting of this committee was held virtually on June 21st, 2021. The draft minutes were posted on TC 5.1 basecamp (<https://3.basecamp.com/3106353/buckets/8415694/uploads/4386835123>) and website.

Motion: To approve the draft minutes from the previous meeting held on June 21st, 2021.

Moved by: John Bade

Seconded by: Adam Stern

Motion passed unanimously.

5. Items of Business

5.1. ASHRAE Code of Ethics

In this and all other ASHRAE meetings, the ASHRAE Code of Conduct requires us to act with honesty, fairness, courtesy, competence, integrity and respect for others, and that *“we shall*

avoid all real or perceived conflicts of interest whenever possible". (See full Code of Ethics: <https://www.ashrae.org/about/governance/code-of-ethics>.)

Recent CHANGES to the TC MOP requiring BALANCE for the voting membership removes the appearance of bias and conflict of interest. The most recent MOP can be found here: <https://www.ashrae.org/technical-resources/technical-committees> in the Procedures, Forms & Information for TCs/TGs/MTGs and TRGs section about half way down the page.

5.2. ASHRAE Commitment to Care

The health and safety of all ASHRAE conference attendees is a top priority. Out of respect for our fellow attendees, **we commit to wear masks indoors, monitor our health, seek medical attention if symptoms develop, and adhere to all ASHRAE Commitment to Care protocols.** We are committed to the well-being of one another.

5.3. Chair's Report - Zhiping Wang

5.3.1. TC Membership Report

We have a total of 94 members with 11 regular voting members, 2 member non-quorum voting members, 62 corresponding members, and 19 provisional corresponding members. Provisional corresponding members have that status for two years before becoming corresponding members. The term for a voting member is four years. We currently have 24 YEA members (defined as 35 and younger). We have added five new members since the last meeting (June 2021). There will be 4 voting members rolling off and 4 new voting members rolling on after the June 2022 meeting.

5.3.2. Other Topics

ASHRAE created alias emails for the TC leaderships. These alias emails allow for the TC leaderships to be contacted through an ASHRAE email versus using TC members personal emails. A complete list of TC alias emails can be downloaded from ASHRAE's website: <https://www.ashrae.org/technical-resources/technical-committees>.

For members' benefit, the alias emails for our TC leaderships are listed below:
Chair – TC0501@ASHRAE.net; Vice Chair – TC0501.VCR@ASHRAE.net;
Secretary – TC0501.SEC@ASHRAE.net; Handbook – TC0501.HBK@ASHRAE.net;
Program – TC0501.PRO@ASHRAE.net; Research – TC0501.RES@ASHRAE.net;
Standards – TC0501.STD@ASHRAE.net; Webmaster – TC0501.WEB@ASHRAE.net.

5.4. Liaison/Section Head Reports

Kevin Marple – Section 5 Head. Kevin joined the meeting and reported:

TAC has a question email: ASKTAC@ASHRAE.org, which can be used to ask questions about technical activities of ASHRAE (e.g., policy, procedure).

ASHRAE is stressing the importance of balance on committees by having members from different backgrounds and ensuring that there are no more than one voting member from different companies/entities but owned by the same corporation.

Jin Wen – Section 5 Research Liaison. Jin joined the meeting and reported:

RAC had stopped funding new research projects after the conferences switched to virtual format and is currently funding only existing research projects. RTARs and work statements are still being reviewed by RAC.

PTAR pathway is for items that will result in a publication. If research is required, an RTAR is required.

5.5. Old Business

5.5.1. Follow-up on Mentoring Program for YEA Members

The chair discussed the importance of getting YEA members involved in the TC. Our non-formal mentorship program is intended to pair YEA members with veteran TC members. Brent Fullerton volunteered to serve as a mentor to YEA members interested in getting involved with our TC and Brent will try to recruit some additional members to serve as mentors as well. At the time of this meeting, we had only one YEA member expressed his interest in the program and Brent will reach out to the member after the meeting.

5.6. New Business

No new business was reported.

6. Subcommittee Reports

The combined subcommittee (Handbook, Research, Standards, and Program) virtual meeting was held on January 25th, 2022.

6.1. Website Report – Harold Dubensky

Harold couldn't join the meeting but provided a website report. His report is attached.

6.2. Standards Subcommittee – Joe Brooks

A list of standards that are applicable to this TC and may be of interest was developed and uploaded to Basecamp. The list includes current standards and standards that are under development. There are several AMCA and IEC standards of interest currently under review or being developed. Any additions to the list of standards can be made and posted to Basecamp.

Link to list of standards of interest:

<https://3.basecamp.com/3106353/buckets/8415694/uploads/3811075321>.

6.3. Handbook Content Development Subcommittee – Patrick Chinoda

The fan terminology and definition section was updated and submitted to the Handbook S/C working group for review and comment. Additional sections to be added include: an isometric fan curve section, a section covering FEI and CFEI including detailed nomenclature and an explanation of these metrics. TAC is encouraging each TC to maintain a list of FAQs on their website rather than in the handbook chapter and a small WG within the handbook WG has been working on the initial creation of a few FAQs.

A draft of the updated handbook chapter will need to be officially approved by the TC after the working group has completed their work.

6.4. Program Development Subcommittee – Rich Stauter

Rich couldn't join the meeting but provided a report to summarize the program development efforts.

TC 5.1 co-sponsored a seminar with TC 1.11 at the summer 2021 conference: Demand for Variable Speed Equipment in Data Center Applications.

TC 5.1 also co-sponsored a seminar with TC 2.6 for this conference: How To Select and Size HVAC Fans for Optimum Acoustical Performance, and Rad Ganesh is one of the speakers. However, this seminar has been postponed until the 2022 annual meeting.

During this meeting, a request was made by Nick Rosner (Vice Chair of TC 1.11) to co-sponsor a seminar with TC 1.11, Electrical Motors and Motor Controls, on unique applications for variable speed equipment with the HVLS fans. Rich will work with Nick on this proposal.

Rich's written program report is attached.

6.5. Research Subcommittee – Brian Reynolds

Loss of AHRI expo income has directly impacted research funding. URPs are not being considered currently. 28 TRPs are waiting for bid.

The first PTAR has been accepted. RAC and Pub Com are working to create the first funded publication.

Evaluation of the Efficiency of Belt Drive for Fans research project (RP-1769) is still in process. Tests have been completed and the data is being evaluated. Test results and the interim report were received by the PMS. A six month no cost extension will be requested.

Update: The 6-month no cost extension with a new project completion date of 08/28/2022 was requested by the PI after the meeting and the request was officially approved by the TC on 02/25/2022 through a letter ballot (Recorded Votes: 12 For - 0 Against - 0 Abstain and the PI didn't vote).

No other RTARs or WS are currently in process. TC 5.1 is a co-sponsor of WS 1835, Characterizing the Performance of Entrained Flow Stacks.

ASHRAE wants the TCs to ensure research topics are appropriate for ASHRAE research rather than manufacturer's research.

Brian's research subcommittee report is attached.

6.6. Long Range Planning Subcommittee – Zhiping Wang

There was no long-range planning subcommittee meeting during the winter 2022 conference. There will be a meeting prior to the summer conference to review and update.

7. Time and Place of Next Meeting

Coinciding with the 2022 ASHRAE Annual Conference in Toronto, ON, Canada and currently scheduled for 6/25/2022 through 6/29/2022.

8. Adjournment – The committee adjourned at 4:25 pm PST

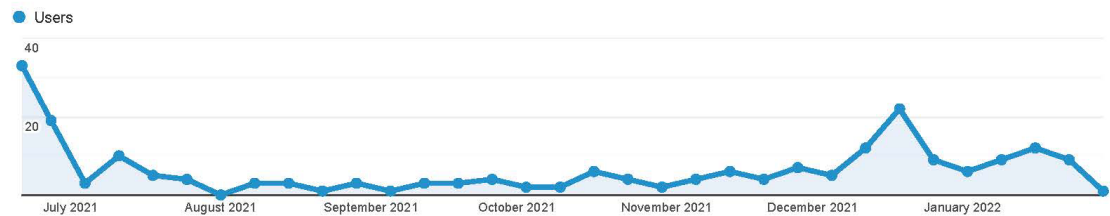
Website Analytics

Audience Overview

All Users
100.00% Users

Jun 21, 2021 - Jan 30, 2022

Overview



Users
203

New Users
178

Sessions
245

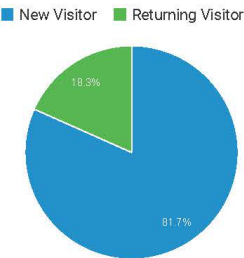
Number of Sessions per User
1.21

Pageviews
481

Pages / Session
1.96

Avg. Session Duration
00:01:39

Bounce Rate
68.16%



Language	Users	% Users
1. en-us	179	88.18%
2. en-gb	4	1.97%
3. es-419	3	1.48%
4. fr-fr	3	1.48%
5. es-es	2	0.99%
6. ko-kr	2	0.99%
7. ar	1	0.49%
8. da	1	0.49%
9. de	1	0.49%
10. el	1	0.49%

TC 5.1 Program Sub Committee Report – For 2022 Winter Meeting in Las Vegas

TC5.1 co-sponsored a seminar with TC1.11 at the 2021 Summer Annual Meeting (virtual): “Demand for Variable Speed Equipment in Data Center Applications”

For the 2022 winter meeting, TC 5.1 co-sponsored a seminar with TC 2.6 and Rad Ganesh from TC 5.1 is one of the speakers. “Seminar 36: How to Select and Size HVAC Fans for Optimum Acoustical Performance” - But it has been postponed to a future conference.

The deadline for seminar and forum proposal submissions for the 2022 meeting in Toronto is February 17. No proposals are currently being considered by the program subcommittee.

The deadline for proposal submissions for the 2023 Winter Meeting in Atlanta is not yet known, but is generally in the September time frame. I would like to continue to pursue a fan basics seminar focusing on flow, sound, application/selection. Even though it is admittedly work, it seems like there should be enough expertise on TC5.1 to be able to off such a seminar without too much effort.

As an alternative to TC5.1 sponsoring a fan basics seminar, I am going explore partnering with AMCA to possibly offer a fan basics short course at the Winter Annual Meeting.

In addition, there is the possibility of a seminar arranged around the results of our ongoing research project on belt drive efficiency. The timing of the conclusion of this project and the winter annual meeting might come together very well.

Going forward with the program sub-committee: I would like to move towards having a more definite roster of the program sub-committee, i.e., a specific group of TC5.1 members who are specifically interested in designing, arranging, and helping to oversee programs that promote the general interest of TC5.1. I believe this would enable us to better focus on our mission. In addition to the winter and summer annual meetings, this would most likely involve remote meetings one or possibly two times in between those major meetings. The program subcommittee would be open to anybody on TC5.1 who has a specific interest in the area. If you are interested, please contact me at TC0501.PRO@ashrae.net It was also suggested that I put this invitation out to interested members of YEA – I will follow up on this.

Rich Stauter

TC 5.1 (Fans) Research Sub-Committee Report

January 31, 2022 (Las Vegas)

By Brian Reynolds

Research Subcommittee Chair Meeting was attended virtually. Also some input from Mike Vaughn:

- Due to the loss of AHR Expo income the last two years ASHRAE has had to cut back on our research project expenditures, and particularly on grants and awards. URP's will not be considered for now.
- The first priority is to maintain the ability to fund ongoing projects where a current contract is in place.
- There are 28 TRPs waiting to bid. A portion of these projects will be released in the spring for bid and three projects were released for bid last fall that are for projects needing data to update the Handbook.
- PMS and PES training modules are now complete.
- RAC and Pub Com have now accepted the first PTAR and are working to create the first funded publications.
- RAC Initiative – Web-based process to track Research project documents
- PMS meetings are open to the public. Invite Mike Vaughn and RL.

Research Liaison Report – Jin Wen

The TC 5.1 Research virtual subcommittee meeting was held on January 25, 2022.

Tim Mathson, AMCA provided an update for RP 1769 (Experimental Evaluation of the Efficiency of Belt Drives for Fans)

- Tests that have been completed
- Things we have learned (other than specific results of testing)
- Approach to be used for analysis and modeling
- Interim report 2 – Test Results was received by the PMS prior to the subcommittee meeting.
- The PMS will meet on February 9 to review and approve the report and consider the request for a 6 month no cost extension.
- PMS members are Craig Wray, Zhiping Wang, Eric Tinglof, and Brian Reynolds (Chair)

WS & RTAR's

TC 5.1 does not currently have and RTAR's or Work Statements in progress.

WS 1835 (Brad Cochran) - Characterizing the Performance of Entrained Flow Stacks from TC 9.1. TC 5.1 is co-sponsor. Craig Wray is on the PMS. RAC returned the WS for revisions. Needs to go out for new bid.

Craig Wray provided a link to the complete list of MTG.HPAS (formally called MTG.EAS) ideas and is publicly available at:

[https://urldefense.com/v3/_https://buildings.lbl.gov/publications/air-handling-system-modeling_!!LkoGuYl8_g!kYkZLB6HM-f3YNlUnn23Xo-w1cQmv90TKPekbYpALZkRQB6lqfwucOpyH0MDH94\\$](https://urldefense.com/v3/_https://buildings.lbl.gov/publications/air-handling-system-modeling_!!LkoGuYl8_g!kYkZLB6HM-f3YNlUnn23Xo-w1cQmv90TKPekbYpALZkRQB6lqfwucOpyH0MDH94$)

The MTG list could be a source for fan research ideas.

Are there any ideas, suggestions for Fan Research topics?

A call for Fan Research suggestions and RTAR authors went out before Las Vegas and also posted in Basecamp. Fan research topics need to be more suitable for ASHRAE research than for manufacturer research.